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NEW SPECIES OF THE GENUS *LASIODERMA* (COLEOPTERA, ANOBIIDAE) FROM CRIMEA AND THE CAUCASUS

I. N. Toskina

107241, post box 25, Moscow, Russia
E-mail: nina_11235813@mail.ru

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New Species of the Genus *Lasioderma* (Coleoptera, Anobiidae) from Crimea and the Caucasus. Toskina I. N. — Five species of the genus *Lasioderma* Stephens, 1835 from Crimea (*L. dolini* sp. n., *L. tauricum* sp. n.), North Caucasus (*L. prolixum* sp. n., *L. sparsum* sp. n.), and Armenia (*L. morulum* sp. n.) are described. A key to 17 species of the genus *Lasioderma* occurring in these regions is compiled.

Key words: Coleoptera, Anobiidae, Xyletininae, *Lasioderma*, Crimea, Caucasus, new species, key.

Новые виды рода *Lasioderma* (Coleoptera, Anobiidae) из Крыма и Кавказа. Тоскина И. Н. — Описаны 5 видов рода *Lasioderma* Stephens, 1835 из Крыма (*L. dolini* sp. n., *L. tauricum* sp. n.), Северного Кавказа (*L. prolixum* sp. n., *L. sparsum* sp. n.) и Армении (*L. morulum* sp. n.). Составлена определительная таблица 17 видов рода *Lasioderma* для названного региона.

Ключевые слова: Coleoptera, Anobiidae, Xyletininae, *Lasioderma*, Крым, Кавказ, новые виды, таблица для определения видов.

Introduction

Anobiid beetles of the genus *Lasioderma* were studied in Crimea and the Caucasus by A. Reitter (1884, 1913), who described *L. punctulatum* Reitter, 1884 and *L. babadjanidesi* Reitter, 1913. Approximately at the same time, Schilsky (1899) described *L. kiesenwetteri* Schilsky, 1899, and Pic (1904) gave very short description of *L. redtenbacheri* var. *caucasicum* Pic, 1904. Later, F. Español (1970, 1992) figured and commented *L. haemorrhoidale* (Illiger, 1807) and S. M. Iablokoff-Khnzorian (1976) illustrated and gave new records of *L. aterrimum* Roubal, 1916. V. D. Logvinovskij (1977) described *L. kryzhanovskii* Logvinovskij, 1977 and provided a key to *Lasioderma* species of the USSR in his “Fauna of USSR” Anobiidae monograph (Logvinovskij, 1985). Recently, I. N. Toskina described *L. mazokhini* Toskina, 1999, *L. mikheechevi* Toskina, 1999 and *L. oculeum* Toskina, 1999 and provided the most comprehensive key to the species of this genus occurring in the USSR and adjacent countries. In this work, 5 additional new species from Crimea and the Caucasus of the genus *Lasioderma* are described, and a key to species occurring in Crimea and Caucasus regions is provided.

Material and methods

Length of the pronotum was measured in profile in a position with the apical and basal margins aligned at the same level. Measurements of the pronotum from above give higher error. The elytral length was measured from the basal margin of scutellum along elytral suture. The elytral width was measured somewhat posteriorly of the shoulders. Aedeagus is figured from its dorsal side, and the pseudopositors from their ventral side. In cases when hind tarsi are lost the ratio of the segments in the middle or fore tarsi is used, and then the ratio of tibia and tarsus lengths is not used. Measurements with asterisk (*) are those of the holotype.

Material is deposited in the collections of Hungarian Museum of Natural History (Budapest) (HMNH), the Zoological Museum of Moscow University (ZMUM), and Zoological Institute of the Russian Academy of Sciences, St.-Petersburg (ZISP).

Descriptions of new species

Lasioderma dolini sp. n. (fig. 1, *1–10*)

M a t e r i a l. Holotype ♀: USSR, [Crimea], Kizil-Dzhar, 8.05.1975 (Dolin) (HMNH). 2 paratypes with the same label data (HMNH, ZMUM).

D e s c r i p t i o n. Habitus as on fig. 1,*1.* Dark yellow beetles; antenna light yellow. Pubescence light yellow, homogenous, fine, appressed on elytral disc, raised on sides.

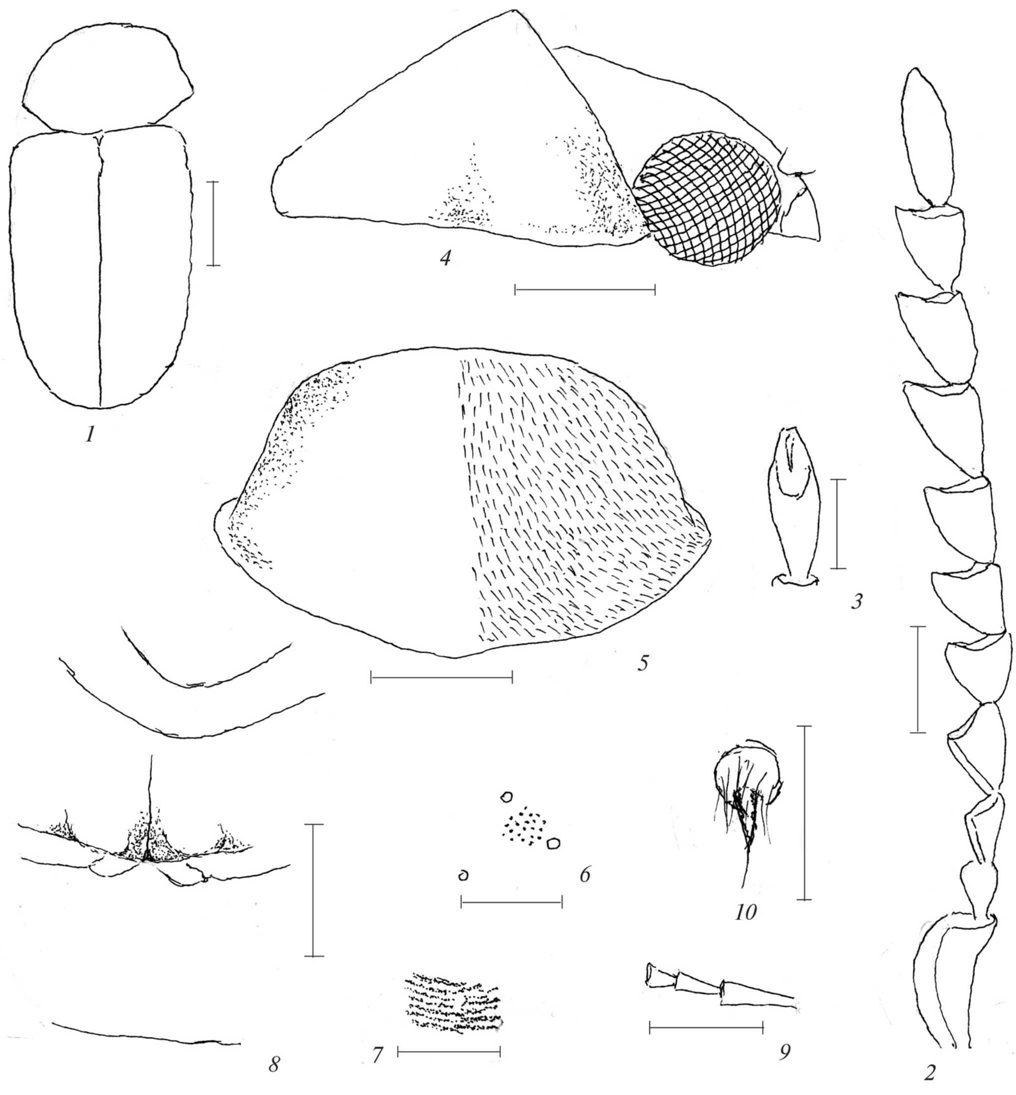


Fig. 1. *Lasioderma dolini* sp. n., holotype ♀: *1* — general outline of body; *2* — antenna; *3* — maxillary palpus; *4* — anterior part of body, lateral view; *5* — pronotum, dorsal view (with pubescence pattern); *6* — punctation on pronotal disc; *7* — structure of elytral surface; *8* — the middle of metasternum and 1st visible abdominal sternite; *9* — fore tarsus (part); *10* — pseudopositor: coxite top with style. Scale bar: 1.0 mm (*1*); 0.5 mm (*4, 5, 8*); 0.2 mm (*2, 9*); 0.1 mm (*3, 6, 7*); 0.05 mm (*10*).

Рис. 1. *Lasioderma dolini* sp. n., голотип ♀: *1* — общий контур тела; *2* — усик; *3* — последний членик челюстных щупиков; *4* — передняя часть тела, вид сбоку; *5* — переднеспинка, вид сверху (с рисунком опушения); *6* — пунктировка на диске переднеспинки; *7* — структура поверхности надкрыльев; *8* — середина заднегруди и 1-го видимого брюшного стернита; *9* — передняя лапка (часть); *10* — ложный яйцеклад: вершина коксита со стилем. Масштабные линейки: 1,0 мм (*1*); 0,5 мм (*4, 5, 8*); 0,2 мм (*2, 9*); 0,1 мм (*3, 6, 7*); 0,05 мм (*10*).

H e a d. Frons slightly convex. Eyes round, convex, separated by 1.8 eye diameters. Antenna: 3rd segment almost as long as the 2nd one; 4th segment with oblique and concave upper margin; 5–10th segments with concave upper margin and convex lateral one. 11th segment 3.3 times as long as wide and 1.6 times as long as the 10th segment. All segments oblong (fig. 1, *2*). Last segment of maxillary palpus is spindle-shaped, 3.3 times as long as thick, with oblique truncate top and with carina on it (fig. 1, *3*).

P r o n o t u m 1.5–1.6* times as wide as long, with base arcuate, anterior angles rectangular, posterior ones not developed (fig. 1, *4*). Pronotum slightly convex, lateral margins narrowly flattened, sides very slightly bulging. Pubescence not parted to two sides (fig. 1, *5*). Surface with dual punctation, small punctures very fine (fig. 1, *6*).

S c u t e l l u m triangular. Elytra 1.8*–2.0 times as long as wide and 2.8*–3.0 times as long as pronotum. Surface very gently wrinkled (fig. 1, *7*).

M e t a s t e r n u m nearly as long as 1st visible abdominal sternite. Anterior rims a little approximated and evenly rounded medially. Medial portion significantly stronger convex in distal third of metasternum (fig. 1, *8*). Surface finely wrinkled with puncture traces.

L e g s. Fore tibiae not widening to their apices. 1st segment of fore tarsus 1,7 times as long as 2nd; 2nd segment 1.7 times as long as 3rd (fig. 1, *9*). Other tarsi lost or strongly damaged in type specimens.

P s e u d o p o s i t o r. Style looking as elongated cone with long chaeta on its top; coxite top with rather long chaetae (fig. 1, *10*).

Length 4.5*–5.0 mm, width 1.8–1.9* mm.

D i f f e r e n t i a l d i a g n o s i s. *L. dolini* differs from other species of the genus *Lasioderma* with having yellow-rufous or reddish-brown colour and with pubescens not parted to two sides on pronotum occurring in this region (*L. haemorrhoidale, L. kryzhanovskii, L. mazokhini, L. oculeum, L. prolixum* sp. n., *L. punctulatum* and *L. serricorne* (Fabricius, 1792) as follows. *L. dolini* differs from *L. serricorne* and *L. prolixum* by the non-dilated fore tibiae (fore tibiae dilated to their apices in the compared species); it differs from *L. haemorrhoidale*, *L. mazokhini*, and *L. oculeum* by evenly rounded anterior rims of metasternum (rims approximated in the middle and straightened or curved forwards in the compared species); the new species differs from *L. kryzhanovskii* by homogenous pubescence on elytra (in the compared species, pubescence dual on elytra) (see Logvinovskij, 1985: 134). At last, *L. dolini* differs from *L. punctulatum* in fine punctation (in *L. punctulatum*, punctation is already visible with magnification x10).

E t y m o l o g y. The new species is named in memory of Ukrainian entomologist Vladimir Gdalich Dolin (1932–2004), who collected the type series.

Lasioderma morulum **sp. n.** (fig. 2, *1–10*)

M a t e r i a l. Holotype ♂: "USSR, Armenia, Gokh-Guekhard, 1500 m, 30 km E from Yerevan, 29.05.1980, N 129" (J. Papp) (HMNH).

D e s c r i p t i o n. Habitus as on fig. 2, *1*. Black beetle except dark yellow elytral apices; continued as narrow stripe along lateral margin of elytron to metasternum. Pubescence very fine, dark, homogenous, appressed on elytra.

H e a d. Frons almost flat. Eyes round, moderately convex, separated by 2.7 eye diameters. Antenna: 3rd segment 1.5 times as long as the 2nd one; 4–5th segments with oblique and concave upper margin and convex lateral one; 6–9th segments with straight upper and lateral margins (10–11th segments are lost). All segments except 5th oblong (fig. 2, *2*).

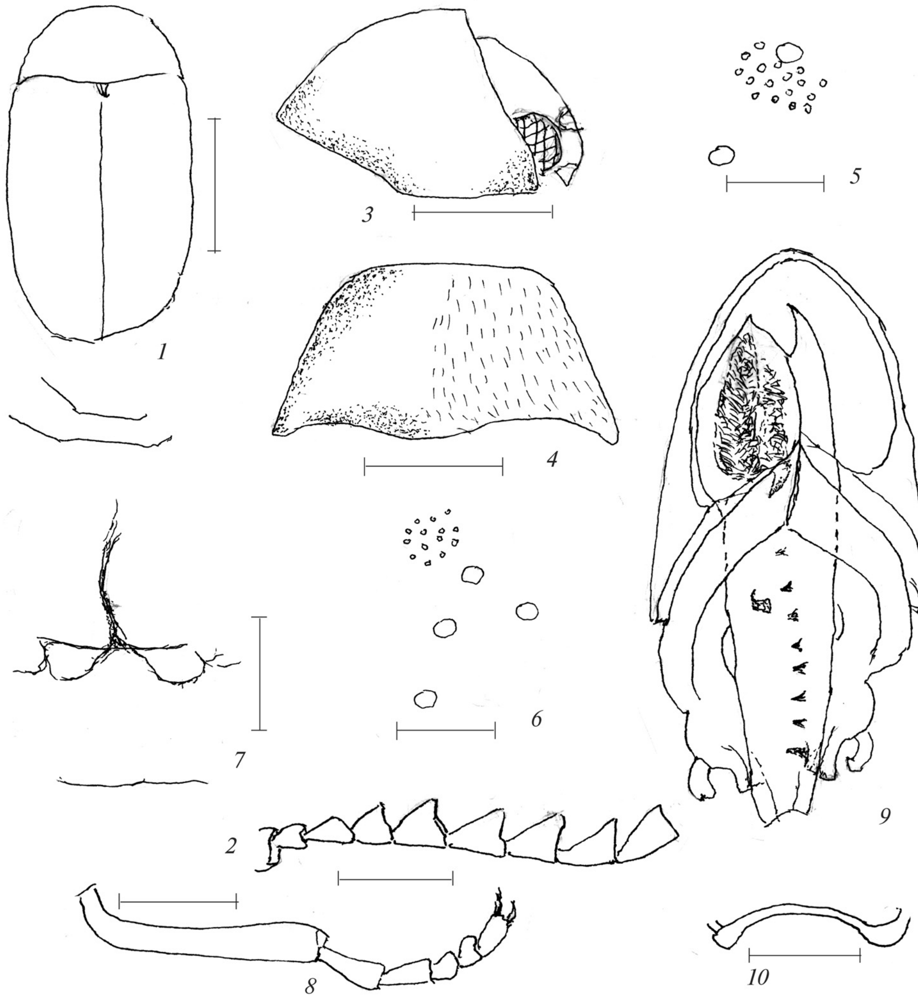


Fig. 2. *Lasioderma morulum* sp. n., holotype ♂: *1* — general outline of body; *2* — antenna; *3* — anterior part of body, lateral view; *4* — pronotum, dorsal view (with pubescence pattern); *5* — punctation on pronotal disc; *6* — punctation on elytral disc; *7* — the middle of metasternum and 1st visible abdominal sternite; *8* — hind tibia and tarsus; *9* — aedeagus; *10* — distal part of genital ring. Scale bar: 1.0 mm (*1*); 0.5 mm (*3, 4*); 0.2 mm (*2, 7–10*); 0.1 mm (*5, 6*).

Рис. 2. *Lasioderma morulum* sp. n., голотип ♂: *1* — общий контур тела; *2* — усик; *3* — передняя часть тела, вид сбоку; *4* — переднеспинка, вид сверху (с рисунком опушения); *5* — пунктировка на диске переднеспинки; *6* — пунктировка на диске надкрыльев; *7* — середина заднегруди и 1-го видимого брюшного стернита; *8* — голень и лапка задней ноги; *9* — эдеагус; *10* — дистальный конец генитального кольца. Масштабные линейки: 1,0 мм (*1*); 0,5 мм (*3, 4*); 0,2 мм (*2, 7–10*); 0,1 мм (*5, 6*).

P r o n o t u m 1.5 times as wide as long; anterior angles rectangular, posterior angles slightly developed (fig. 2, *3*). Sides not bulging, lateral margins not flattened. Pubescence not parted to two sides (fig. 2, *4*). Surface with dual punctation, looking as if pitted because of large punctures (fig. 2, *5*).

S c u t e l l u m triangular. Elytra 1.5 times as long as wide and 2.1 times as long as pronotum. Surface with dual punctation and wrinkles (fig. 2, *6*).

M e t a s t e r n u m 1.5 times as long as 1st visible abdominal sternite. Anterior rims approximated and straightened medially. (fig. 2, *7*).

L e g s. Fore tibiae not widened to their apices. Hind tarsus more than 0.8 times as long as hind tibia; 1st segment 1.3 times as long as 2nd segment; 2nd segment 1.9 times

as long as 3rd one; 3rd segment 1.3 times as long as 4th segment; 5th segment almost as long as the 2nd one; claws large (fig. 2, *8*).

Aedeagus. Penis narrows to its apex, 9.3 times as long as wide at apex; suddenly widened in basal third. Internal penial sac with longitudinal row of 6–7 small spines and with 3 spines of medium sizes; one of them probably representing end of short bifurcated "brush". Parameres shortly bifurcated at ends, outgrowths nearly reaching paramere apices (fig. 2, *9*). Cross-piece of distal end of genital ring looking like thin band slightly widened at every side (fig. 2, *10*).

Length 2.25 mm, width 1.10 mm.

Differential diagnosis. The new species differs from other of black-coloured *Lasioderma* species occurring in examined region (*L. aterrimum*; *L. obscurum* (Solsky, 1867)) in the following characters. *L. morulum* differs from *L. aterrimum* in oblong 6–9th antennal segments (4–10th antennal segments strongly transverse in *L. aterrimum* (Iablokoff-Khnzorian, 1976, fig. 10)). *L. morulum* differs from *L. obscurum* in round eyes and pubescence not parted to two sides on pronotum (eyes shortly oval and pubescence parted to two sides on pronotum in *L. obscurum*).

Etymology. Species name comes from the Latin *morulus* (black, dark, gloomy), reflecting colour of its body.

Lasioderma prolixum **sp. n.** (fig. 3, *1–12*)

Material. Holotype ♂: [Russia,] Krasnodar Terr., Severskij Distr., Ubinskoe Forestry, 21.06.1971 (Nikitsky) (as "*Lasioderma obscurum* Sols." M. Dubrovina det.) (ZMUM, coll. Nikitsky).

Description. Habitus as on fig. 3, *1*. Beetle blackish-brown, tinged with dark red; margins and elytral apices not light-coloured. Pubescence dark grey, fine, homogenous, appressed.

Head. Frons slightly convex. Eyes round, slightly convex, separated by about 2.5 eye diameters. Antenna: 1st segment unusually flattened; 3rd segment 1.4 times as long as the 2nd one; 4–5th segments with oblique and concave upper margin and convex lateral one; 6–9th segments strongly transverse, their upper and lower (i. e. lateral) margins straight. (10th and 11th segment lost) (fig. 3, *2*).

Pronotum 1.47 times as wide as long; anterior angles slightly acute, posterior ones very clear, not rounded (fig. 3, *3*). Lateral margins not flattened. Pubescence not parted to two sides (fig. 3, *4*). Surface with dual punctation, and more large punctures are nearly as large as small ones (fig. 3, *5*). Difference between large and small punctures is more distinct near basal margin (fig. 3, *6*).

Scutellum triangular with blunt top. Elytra 1.4 times as long as wide and 2.3 times as long as pronotum. Surface with fine, uniform punctation (fig. 3,*7*).

Metasternum 1.5 times as long as the 1st visible abdominal sternite; anterior rims approximated in the middle, 1st rim is straight, 2nd one a little curved forwards (fig. 3, *8*).

Legs. Fore tibiae dilated to their apices (fig. 3, *9*); all tibiae flattened. Tarsi short: hind tarsus 0.54 times as long as its tibia; 1st segment of middle tarsus 3 times as long as the 2nd one; 2nd segment 1.2 times as long as the 3rd one; the latter 1.2 times as long as the 4th one; 5th segment 1.4 times as long as the 2nd one (fig. 3, *10*).

Aedeagus. Penis narrows to rounded apex, 7.2 times as long as wide before rounded apex. Internal penial sac has apical and basal "brushes"; basal ends are completed with 3 small needle-shaped sclerites in apical "brush". The apical end of basal "brush" is completed with rather small digitate sclerite. Basal parts of parameres (from dorsal surface) with separated lobes. Side outgrowth consists of two halves and reaches the paramere apex. Phallobase short (fig. 3, *11*). Cross-piece of genital ring is ribbon-like, strongly curved (fig. 3, *12*).

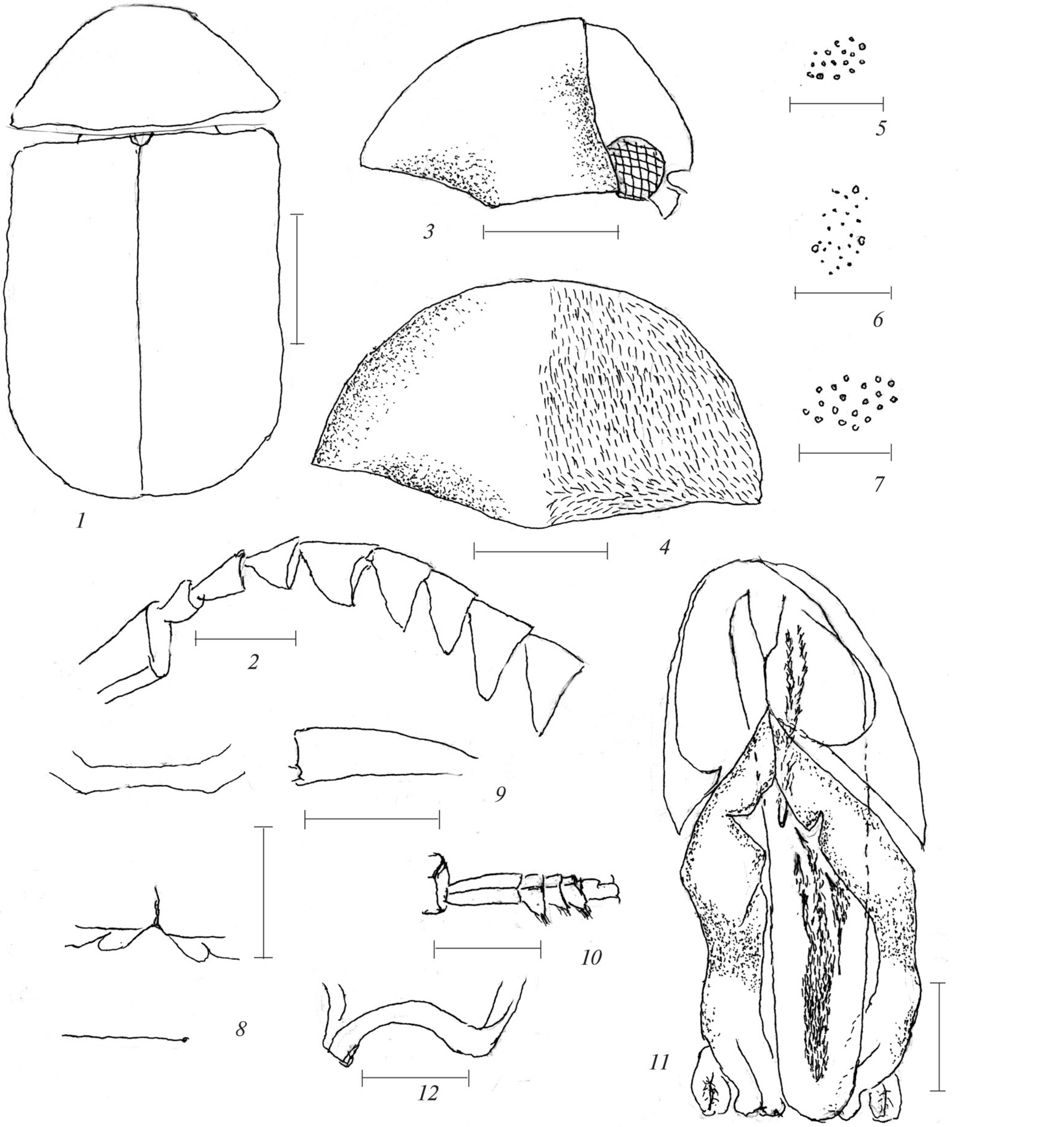


Fig. 3. *Lasioderma prolixum* sp. n., holotype ♂: *1* — general outline of body; *2* — antenna; *3* — anterior part of body, lateral view; *4* — pronotum, dorsal view (with pubescence pattern); *5* — punctation on pronotal disc; *6* — punctation near pronotal basal margin; *7* — punctation on elytral disc; *8* — the middle of metasternum and 1st visible abdominal sternite; *9* — fore tibia; *10* — middle tarsus; *11* — aedeagus; *12* — distal part of genital ring. Scale bar: 1.0 mm (*1*); 0.5 mm (*3, 4, 8, 9*); 0.2 mm (*2, 10–12*); 0.1 mm (*5–7*).

Рис. 3. *Lasioderma prolixum* sp. n., голотип ♂: *1* — общий контур тела; *2* — усик; *3* — передняя часть тела, вид сбоку; *4* — переднеспинка, вид сверху (с рисунком опушения); *5* — пунктировка на диске переднеспинки; *6* — пунктировка переднеспинки у базального края; *7* — пунктировка на диске надкрыльев; *8* — середина заднегруди и 1-го видимого брюшного стернита; *9* — передняя голень; *10* — средняя лапка; *11* — эдеагус; *12* — дистальный конец генитального кольца. Масштабные линейки: 1,0 мм (*1*); 0,5 мм (*3, 4, 8, 9*); 0,2 мм (*2, 10–12*); 0,1 мм (*5–7*).

Length 3.20 mm, width 1.75 mm.

Differential diagnosis. The new species belongs to the group of yellow- or red-brown beetles of the genus *Lasioderma* with pubescence not parted to two sides on pronotum, fore tibiae dilated to their apices. *L. prolixum* differs from the cosmopolitan

L. serricorne by clearly developed posterior angles of the pronotum, in strongly transverse middle antennal segments with straight lower margins, approximated anterior rims of the metasternum, by very dark (nearly black) body colour (in *L. serricorne*, pronotum posterior angles not developed, middle antennal segments with convex lateral margin, anterior rims evenly rounded in metasternum, body greyish-red, antenna yellow). These species differ also in penial armaments (see article by Español, 1972, fig. 33; and fig. 3, *11* in this article).

Etymology. Species name comes from the Latin *prolixus* (wide, broad, extensive), reflecting its body shape.

***Lasioderma sparsum* sp. n.** (fig. 4, *1–10*)

Material. Holotype ♂: [Russia, Krasnodar Terr.] Anapa, 27.07.1962 (V. Meshcheryakov) (ZMUM).

Description. Habitus as on fig. 4, *1*. Beetle brown: head, pronotum and abdomen black-brown, elytra reddish-brown, elytral apices with yellow-red spot. Pubescence light grey, heterogeneous, raised, rather long, arranged with uneven and unclear transverse stripes and spots on elytra. Elytral surface with 2–3 costae near suture and lateral margins (fig. 4, *2*).

Head. Frons almost flat. Eyes round, convex, separated by 1.6 eye diameters. Antenna: 3rd segment 1.5 times as long as 2nd; 4th segment with oblique and straight upper and straight lateral margins; 5–10th segments with slightly convex lateral and straight upper margin. 11th segment 3 times as long as wide and 1.5 times as long as 10th segment. All segments oblong (fig. 4, *3*). Last segment of maxillary palpus spindle-shaped.

Pronotum 1.55 times as wide as long; anterior angles rectangular, posterior ones slightly developed (fig. 4, *4*). Pronotum flattened at posterior angles. Pubescence parted to two sides and arranged unevenly on pronotum surface (fig. 4, *5*). The latter with uniform punctation, its punctures separated by 0.25–0.5 puncture diameters (fig. 4, *6*).

Scutellum semioval. Elytra 1.6 times as long as wide and 2.6 times as long as pronotum. Surface with dual punctation, small punctures separated by 1–2 puncture diameters (fig. 4, *7*).

Metasternum twice as long as the 1st visible abdominal sternite; anterior rims approximated a little in the middle and widely straightened (fig. 4, *8*).

Legs. Fore tibiae not dilated to the apices. 1st segment of middle tarsus 1.5 times as long as the 2nd one; 2nd segment 1.8 times as long as the 3rd one; 3rd segment 1.1 times as long as the 4th one; 5th segment almost as long as the 2nd one (fig. 4, *9*).

Aedeagus. Internal penial sac turned out, its armaments consists of longitudinal row of 8 small spines, 2 detached small spines, and 3 large spines (fig. 4, *10*).

Length 3.5 mm, width 1.65 mm.

Differential diagnosis. The new species differs from other species of the genus *Lasioderma* without black body colouration, with pubescence parted to two sides on pronotum, and distributed in the named region (*L. babadjanidesi*, *L. redtenbacheri* (Bach, 1852), *L. mikheechevi, L. kiesenwetteri, L. tauricum* sp. n.) in the following characters. *L. sparsum* has rims of metasternum which are approximated and straightened in the middle (these rims evenly rounded in *L. babadjanidesi*, *L. redtenbacheri*; and rims slightly approximated and 1st rim hardly straightened in *L. mikheechevi*). *L. sparsum* differs from *L. kiesenwetteri* by brown colour of body and pubescence parted to two sides on pronotal disc (body yellow-red and pubescence parted near apical margin of pronotum in *L. kiesenwetteri*). *L. sparsum* differs from *L. tauricum* in tarsi structures (2nd segment about as long as the 1st one, and 5th segment 1.7 times as short as the 2nd one in *L. tauricum,* whereas 1st segment 1.5 times as long as the 2nd one and 5th segment as long as the 2nd one in *L. sparsum*). Also *L. sparsum* differs from the named

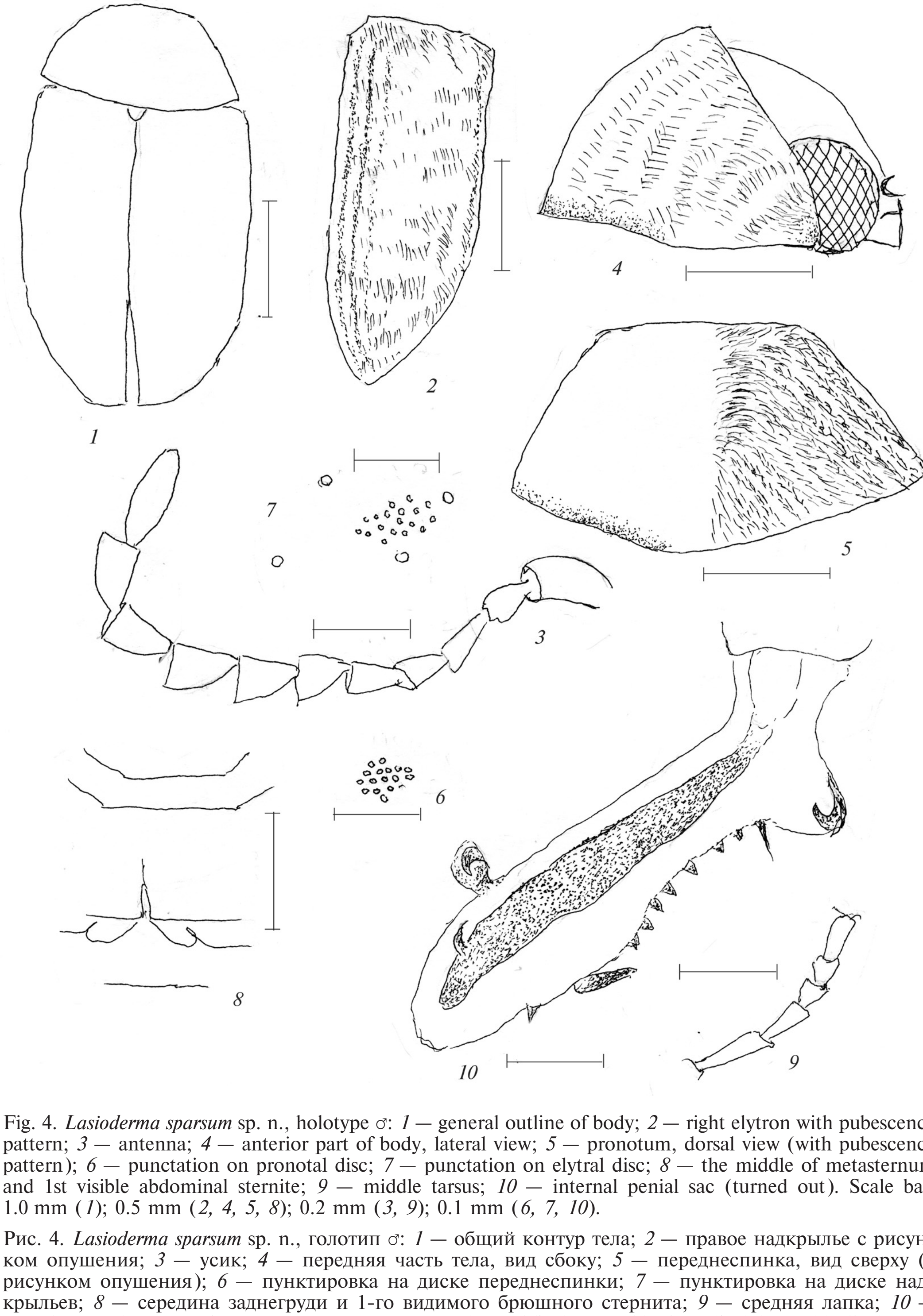


Fig. 4. *Lasioderma sparsum* sp. n., holotype ♂: *1* — general outline of body; *2* — right elytron with pubescence pattern; *3* — antenna; *4* — anterior part of body, lateral view; *5* — pronotum, dorsal view (with pubescence pattern); *6* — punctation on pronotal disc; *7* — punctation on elytral disc; *8* — the middle of metasternum and 1st visible abdominal sternite; *9* — middle tarsus; *10* — internal penial sac (turned out). Scale bar: 1.0 mm (*1*); 0.5 mm (*2, 4, 5, 8*); 0.2 mm (*3, 9*); 0.1 mm (*6, 7, 10*).

Рис. 4. *Lasioderma sparsum* sp. n., голотип ♂: *1* — общий контур тела; *2* — правое надкрылье с рисунком опушения; *3* — усик; *4* — передняя часть тела, вид сбоку; *5* — переднеспинка, вид сверху (с рисунком опушения); *6* — пунктировка на диске переднеспинки; *7* — пунктировка на диске надкрыльев; *8* — середина заднегруди и 1-го видимого брюшного стернита; *9* — средняя лапка; *10* — эндофаллус (вывернут). Масштабные линейки: 1,0 мм (*1*); 0,5 мм (*2, 4, 5, 8*); 0,2 мм (*3, 9*); 0,1 мм (*6, 7, 10*).

species in spotted pubescence on elytra and armaments of internal penial sac (see Toskina, 1999: figs 44, 92, 140, Logvinovskij, 1985: fig. 228, and this paper: fig. 4,*10* and 5,*10*).

Etymology. Species name comes from the Latin *sparsus* (sparse, diffuse, dispersed), reflecting diffused or spotted distribution of pubescence on the body.

***Lasioderma tauricum* sp. n.** (fig. 5,*1–11*)

Material. Holotype ♂: Crimea, Karadag, 5.08.1991, meadow, net sweeping (I. T. A.). ("*Lasioderma kiesenwetteri* Schils." I. T. A. det., 1992) (ZMUM).

Description. Habitus as on fig. 5,*1*. Elytra brownish-yellow with yellow apices; pronotum and head brownish; ventral surface black-brown; antennae (except brown 1st segment) and legs light yellow. Pubescence yellowish, homogenous, slightly raised.

Head. Frons slightly convex. Eyes round, convex, separated by 1.7 eye diameters. Antenna: 3rd segment almost as long as the 2nd one; 4–5th segments with concave upper margin and convex lateral one; these two segments are of smaller size than next 6–10th segments; the latters have straight upper and lateral margins. 11th segment about 3 times as long as wide and 1.9 times as long as the 10th segment (fig. 5,*2*). Last segment of maxillary palpus is fusiform, about 3.5 times as long as its thickness, with oblique truncate apex (fig. 5, *3*).

Pronotum 1.7 times as wide as long; anterior angles rectangular, posterior angles obtuse, rounded. Pronotum convex more strongly near basal margin; sides not bulging (fig. 5,*4*). Pubescence parted to two sides on disc (fig. 5, *5*). Surface with fine, uniform punctation, where punctures separated by 0.5–1.0 puncture diameter (fig. 5, *6*).

Scutellum semioval. Elytra 1.45 times as long as wide and 2.4 times as long as pronotum. Surface with uniform punctation, punctures separated by 1–2 puncture diameters (fig. 5, *7*).

Metasternum about 1.5 times as long as the 1st visible abdominal sternite; anterior rims approximated in the middle, 1st rim is straightened, the 2nd one slightly curved forward (fig. 5, *8*).

Legs. Fore tibia not dilated to the apices. Tarsi as long as or longer than tibiae. 1st segment of hind tarsus 1.2 times as long as 2nd segment; 2nd segment 3 times as long as 3rd segment; 3rd segment 1.2 times as long as 4th segment; 5th segment 1.7 times as short as 2nd segment (fig. 5, *9*).

Aedeagus. Penis straight, almost parallel-sized, not narrowed to its apex; about 8 times as long as wide at apex; the latter has quadrate notch. Internal penial sac with two longitudinal rows (4 + 9) of small spines, 5 small spines without arranging in rows, and 1 large spine in apex. Penis is filled with thick, double "brush" in its two fifth of basal part. Ends of parameres not deeply bifurcated, paramere outgrowth not reaching paramere apex (fig. 5, *10*). Cross-piece of genital ring segment very thin medially but strongly widened to its sides (fig. 5, *11*).

Length 2.4 mm, width 1.2 mm.

Differential diagnosis. The new species belongs to the group of yellow-brown species with pubescence parted to two sides on pronotum and tibiae not widened to their apices, which includes *L. babadjanidesi*, *L kiesenwetteri*, *L. mikheechevi*, *L. redtenbacheri*, and *L. sparsum* sp. n. *L. tauricum* differs from *L. babadjanidesi* and *L. redtenbacheri* by approximated anterior rims of metasternum (anterior rims evenly rounded in those species), and from *L. kiesenwetteri, L. mikheechevi*, and *L. sparsum* sp. n. first of all in shape of antennal segments: 4–5th segments are smaller and with convex lateral margin whereas the next segments are larger and with straight lateral margin; secondly, 1st tarsal segment almost as long as the 2nd segment and 5th segment is very short (1.7 times as short as the 2nd segment) in *L. tauricum*. In compared species, only 4th segment has oblique upper margin, 5–10th segments more or less uniform, the 1st tarsal segment 1.5 times and more as long as the 2nd segment, and 5th tarsal segment as long as the 2nd one in *L. mikheechevi* and *L. sparsum* and a little

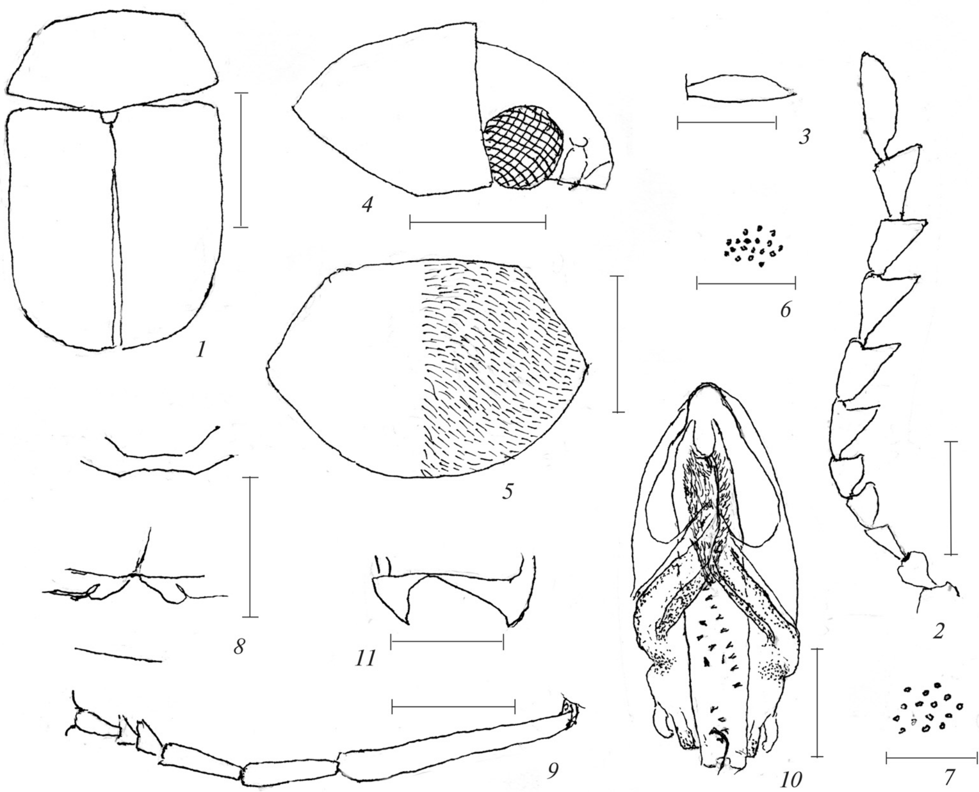


Fig. 5. *Lasioderma tauricum* sp. n., holotype ♂: *1* — general outline of body; *2* — antenna; *3* — last segment of maxillary palpus; *4* — anterior part of body, lateral view; *5* — pronotum, dorsal view (with pubescence pattern); *6* — punctation on pronotal disc; *7* — punctation on elytral disc; *8* — the middle of metasternum and 1st visible abdominal sternite; *9* — hind tibia and tarsus; *10* — aedeagus; *11* — distal part of genital ring. Scale bar: 1.0 mm (*1*); 0.5 mm (*4, 5, 8*); 0.2 mm (*2, 9–11*); 0.1 mm (*3, 6, 7*).

Рис. 5. *Lasioderma tauricum* sp. n., голотип ♂: *1* — общий контур тела; *2* — усик; *3* — последний членик челюстных щупиков; *4* — передняя часть тела, вид сбоку; *5* — переднеспинка, вид сверху (с рисунком опушения); *6* — пунктировка на диске переднеспинки; *7* — пунктировка на диске надкрыльев; *8* — середина заднегруди и 1-го видимого брюшного стернита; *9* — задние голень и лапка; *10* — эдеагус; *11* — дистальный конец генитального кольца. Масштабные линейки: 1,0 мм (*1*); 0,5 мм (*4, 5, 8*); 0,2 мм (*2, 9–11*); 0,1 мм (*3, 6, 7*).

shorter than the 2nd segment in *L. kiesenwetteri*. Difference in penial armaments is shown in fig. 5, *10* and 4, *10* (also compare to: Toskina, 1999: fig. 44, 92, 140, and Logvinovskij, 1985: fig. 228).

Etymology. Species name is derived from the Latin geographic name Tauria (Crimea), the type locality of the new species.

Key to species of the genus *Lasioderma* from Crimea and the Caucasus

Таблица для определения видов рода *Lasioderma* из Крыма и Кавказа

In this key, some data from the keys by Iablokoff-Khnzorian (1976), Logvinovskij (1985), Toskina (1999), and articles and books by Arnoldi (1965), Español (1970, 1972, 1992), Zahradník (1998, 2000 et al.), and some others, were used.

1. Beetles black (excepting light margins of pronotum and elytra) or having something of black colour. 2
- Beetles without black colour, but can be blackish-brown. 4
2. Antenna: 5–10th segments transverse, their lateral (i. e., lower) margins convex (Iablokoff-Khnzorian, 1976, fig. 1,*10*). Pronotum slightly campaniform, pubescence forms parting on pronotal disc; beetles wholly black, pubescence grey (Roubal, 1916, S. 48). Length 2.5–3.4 mm. Czechoslovakia, Caucasus; Crimea. .... *L. aterrimum* Roubal, 1916.

- At least 8–10th (♂) or 9–10th (♀) antennal segments should be oblong 3
3. Eyes shortly oval. Antenna: 5–7th (♂) or 5–8th (♀) segments only transverse, with convex lateral margin. Pronotum not campaniform, 1.7 times as wide as long; posterior angles developed, rounded; pubescence parted to two sides on pronotal disc. Metasternum: anterior rims approximated in the middle, 1st rim straightened, the 2nd one curved forwards. Internal penial sac with 3 rows (7 + 5 + 11) of small spines. Pronotal and elytral apical margins reddish; sometimes elytra dark brown. Pubescence homogenous, yellowish-grey, appressed. Length 2.4–4.5 mm. Steppes of Southern Europe (Arnoldi, 1965), Crimea, Caucasus. .... *L. obscurum* (Solsky, 1867).
- Eyes round. Antenna: 6–10th segments oblong, with straight lateral margin. Pronotum 1.5 times as wide as long, its posterior angles slightly developed; pubescence not parted to two sides. Metasternum: anterior rims approximated and straightened in the middle. Internal penial sac with 1 row of 6–7 small spines and 3 spines of median size. Length 2.25 mm, width 1.1 mm. Armenia. .... *L. morulum* **sp. n.**
4. Pronotal surface with very large punctation, punctures are seen with magnification x10. Internal penial sac with 2 rows (8 + 10) of small spines and 4 large spines (Logvinovskij, 1985, fig. 233). Beetles rufous. Length 1.2–2.1 mm. Crimea (Arnoldi, 1965); Israel (Logvinovskij, 1985; Zahradník et al., 2000). .... *L. punctulatum* Reitter, 1884.
- Surface with much smaller punctation. 5
5. Pubescence not parted to two sides on pronotal disc. 6
- Pubescence parted to two sides on pronotal disc. 12
6. Fore tibiae widened to their apices. 7
- Fore tibiae not widened to their apices. 8
7. Entirely blackish-brown. Antenna: 4–5th segments with concave upper and convex lateral margin; 6–9th segments transverse, with straight upper and lateral margins. Pronotum with clear posterior angles. Metasternum: anterior rims approximated in the middle, 1st rim straightened, the 2nd one curved forwards. 1st segment of hind tarsus 3 times as long as the 2nd one. Internal penial sac with “brush” in its apical half, basal ends of this “brush” are finished with 3 small needle-shaped sclerites. Pubescence dark grey, homogenous, appressed. Length 3.2 mm, width 1.75 mm. Northern Caucasus. .... *L. prolixum* **sp. n.**
- Brownish-red, antennae light yellow. Antenna: 4–10th segment cup-shaped. Pronotum without posterior angles. Metasternum: anterior rims evenly rounded. 1st segment of hind tarsus twice as long as the 2nd one. Internal penial sac with 7 spines of different sizes (Español, 1972, fig. 33; 1992, fig. 58B). Length 1.5–2.9 mm. Cosmopolite. .... *L. serricorne* (Fabricius, 1792)
8. Eyes very large: separated by 1.35 eye diameters. Antenna: 3rd segment 1.5 times as long as the 2nd one; 4–10th segments with convex lateral margin, the segments oblong except 5–6th segments. Pronotum 1.5 times as wide as long, posterior angles developed, rounded. Elytra 1.5 times as long as wide. Metasternum: anterior rims approximated and straightened in the middle. Internal penial sac with 2 rows (9 + 5) of small spines, 2 large spines, and 2 baculiform sclerites (Toskina, 1999, fig. 126). Beetle reddish-brown, antennae lighter. Pubescence golden-yellow, heterogeneous, partly inclined, long inclined hairs not arranged in rows. Length 2.3 mm, width 1.6 mm. Azerbaijan. .... *L. oculeum* Toskina, 1999.
- Eyes smaller 9
9. Antenna: 3rd segment about as long as the 2nd one. 10
- 3rd antennal segment 1.5 times as long as the 2nd one; 5–10th segments with convex lateral one (Español, 1970, fig. 17). Pronotum 1.4 times as wide as long; posterior angles developed. Elytra 1.6 times as long as wide. Metasternum: anterior rims approximated in the middle and curved forwards. Internal penial sac with 14 small spines, 2 spines of medium sizes, and 2 very large spines (Español, 1992, fig. 58E). Dorsal surface dark brown, elytral apex or elytra as a whole are red. Pubescence homogenous. Length 2.0–3.2 mm. Black Sea steppe (leg. Arnoldi, coll. ZISP); Crimea, Caucasus (Logvinovskij, 1985); Mediterranea (Español, 1992); Turkey, Canary Is. (Zahradník, 1998); Israel (Zahradník et al., 2000). .... *L. haemorrhoidale* (Illiger, 1807)
10. Pubescence homogenous and appressed on elytra. Antenna: 4th segment with oblique and concave upper margin and straight lateral one. 5–10th segments with convex lateral margin. Pronotum 1.5–1.6 times as wide as long, posterior angles not developed. Elytra 1.8–2.0 times as long as wide; surface wrinkled. Metasternum: anterior rims evenly rounded. Beetles greyish-yellow. Length 4.5–5.0 mm, width 1.8–1.9 mm. Crimea. .... *L. dolini* **sp. n.**
- Elytra with dual pubescence. 11
11. Legs: 1st segment of hind tarsus 1.5 times as long as the 2nd one. Antenna: middle segments 1.6–1.7 times as long as wide (Logvinovskij, 1985, fig. 209). Pronotum: posterior angles rounded. Beetles yellow-brown, antennae dark brown. Length 3.2–4.2 mm. Azerbaijan. .... *L. kryzhanovskii* Logvinovskij, 1977.
- Legs: 1st segment of hind tarsus is as long as the 2nd one. Antenna: middle segments hardly oblong (Toskina, 1999, fig. 71). Pronotum 1.6 times as wide as long, posterior angles slightly developed. Elytra 1.5 times as long as wide. Metasternum: anterior rims approximated and straightened in the middle.

Dorsal surface reddish-brown, ventral surface darker, antennae and legs yellow. Length 2.8 mm, width 1.4 mm. Armenia. .... *L. mazokhini* Toskina, 1999.

12. Anterior rims of metasternum `are evenly rounded in the middle. 13

- Anterior rims of metasternum are approximated in the middle. 15

13. Antenna: 3rd segment 1.5–1.7 times as long as the 2nd one; 4–10th segments with straight lateral margins. Pronotum 1.44 times as wide as long; its posterior angles are developed; pubescence parted to two sides on apical third of pronotum. Elytra 1.7 times as long as wide; surface with uniform punctation, punctures not merged in wrinkles. 1st segment of hind tarsus 1.5 times as long as the 2nd one. Beetles brick-red. Pubescence heterogeneous. Length 3.9–5.1 mm. Steppe and partially-wooded steppe in South Russia (Arnoldi, 1965); Crimea, the Caucasus, Kazakhstan (Logvinovskij, 1985); the Middle and South Europe, North Africa (Español, 1992); Turkey (Zahradník, 1998); Israel (Zahradník et al., 2000). .... *L. redtenbacheri* (Bach, 1852).

- Antenna: 3rd segment almost as long as the 2nd one 14

14. Pronotum 1.8 times as wide as long; posterior angles are missing. Pubescence forming wave-picture on pronotum. Elytra 1.5–1.6 times as long as wide. 1st tarsal segment of hind tarsus twice as long as the 2nd one. Internal penial sac with 8 rather large spines (Toskina, 1999, fig. 44). Beetles dark greyish-brown, pubescence homogenous, yellowish-brown, and appressed. Length 2.8–3.5 mm. Transcaucasus. .... *L. babadjanidesi* Reitter, 1913.

- Pronotum 1.6–1.7 times as wide as long; posterior angles slightly developed. Elytra 1.5 times as long as wide. 1st segment of hind tarsus 1.5 times as long as the 2nd one. Internal penial sac with row of 3 small spines and 5 spines of medium size. Beetles from dark brown to reddish-brown, apical third of elytra greyish-yellow. Pubescence homogenous, appressed, golden-grey, not waving on pronotum. Length 2.7–3.2 mm, width 1.5–1.6 mm. Azerbaijan. .... *L. mikheechevi* Toskina, 1999.

15. Pubescence parted to two sides near pronotal apical margin only; posterior angles developed and rounded. Elytra 1.56 times as long as wide, surface with uniform punctation. Internal penial sac with 3 rows (5 + 5 + 14) of small spines and 2 large spines. Beetles yellow-red colour, antennae and legs yellow. Pubescence light yellow, homogenous, dense, raised. Length 2.8–3.5 mm. Crimea (Arnoldi, 1965); Crimea, the Caucasus, West Kazakhstan (Logvinovskij, 1985); South Europe, Turkey (Zahradnik, 1998); Israel (Zahradnik et. al., 2000). .... *L. kiesenwetteri* Schilsky, 1899

- Pubescence parted to two sides all over the disc of pronotum 16

16. Pubescence unevenly arranged, maculate on elytra. Antenna: 4th segment with oblique and straight upper margin, 5–10th segments with slightly convex lateral margin. Pronotum 1.55 times as wide as long, posterior angles slightly developed. Elytra 1.6 times as long as wide, surface with dual punctation. 1st segment of hind tarsus 1.5 times as long as the 2nd one. Internal penial sac with 1 row of 8 small spines, 2 detached small spines, and 3 large spines. Beetle wholly brown, pubescence heterogeneous, raised. Length 3.5 mm, width 1.65 mm. Northern Caucasus. .... *L. sparsum* **sp. n.**

- Surface of elytra with homogenous pubescence. Antenna: 4–5th segments with oblique and concave upper margin and convex lateral one; these segments are of smaller size than next segments; 6–10th segments with straight lateral margin. Pronotum 1.7 times as wide as long, posterior angles developed. Elytra 1.45 times as long as wide, surface with uniform punctation. Metasternum: 1st rim straightened, 2nd curved forwards. 1st segment of hind tarsus nearly as long as the 2nd one. Internal penial sac with 2 rows (14 + 9) of small spines, 5 small spines not arranged in rows, and 1 large spine. Beetle brownish-yellow, head brown. Pubescence homogenous, slightly raised. Length 2.4 mm, width 1.2 mm. Crimea .... *L. tauricum* **sp. n.**

Discussion

Lohse considered *L. aterrimum* Roubal as synonym of *L. obscurum* (Solsky) (Lohse, 1969: 54), but Iablokoff-Khnzorian figured parts of *L. aterrimum* holotype (body outline, antennae, parts of aedeagus) and separated these two species in his key (Iablokoff-khnzorian, 1976, fig. 8, 10, 5; p. 126). Zahradník when describing a new species *L. anatolica* from Turkey compared it with other species of black colour, including *L. aterrimum* in the differential diagnosis, so this author admitted *L. aterrimum* as a separate species (Zahradník, 1996: 98). We included this species in the key.

We are unable to recognize and include *L. redtenbacheri* var. *caucasicum* Pic, 1904 in the key because its holotype was unavailable in this study, and author's description of this form is very short (beetle of clay-rufousish colour, with very dense pubescence). There is a specimen in the ZISP collection which was identified as *L. obscurum* var *caucasicum* Pic. A. Reichardt determinated it as a valid species *L. caucasicum* Pic. *L. obscurum* and *L. caucasicum* Pic — Reichardt differ rather strongly in metasternum structures, in eyes, at last in beetles colour (anterior rims evenly rounded, eyes round, bee-

tle with elytra black only in "*caucasicum*" whereas anterior rims of metasternum are approximated very strongly, eyes oval, beetles usually wholly black in *L. obscurum*). We do not know if A. Reichardt had ever seen the holotype of *L. redtenbacheri* var. *caucasicum* Pic. Short description *L. redtenbacheri* var. *caucasicum* by Pic is more related to *L redtenbacheri* as its variant than to *L. obscurum*. We leave this question open for the present time.

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